

CURRENT CLAIMS - CLEAN COPY - OZ 51568

1. The use of α -lipoic acid or α -dihydrolipoic acid for increasing the bioavailability of mineral salts.
2. The use as claimed in claim 1, wherein at least one mineral salt is used in combination with α -lipoic acid or α -dihydrolipoic acid.
3. The use as claimed in claim 2, wherein mineral salts of the formula I are used,



where

M is a monovalent to trivalent physiologically acceptable metal cation,

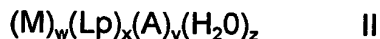
B is a monovalent to trivalent physiologically acceptable anion,

n is 1, 2 or 3 and

m is 1, 2 or 3,

where the subscripts n and m correspond to the valency and charge equalization of the mineral salt of the formula I.

4. The use as claimed in claim 1, wherein the combination used is metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes.
5. The use as claimed in claim 4, wherein the combination used is metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes of the formula II,



where

M is a monovalent to trivalent physiologically acceptable metal cation or a mixture of monovalent to trivalent physiologically acceptable metal cations,

Lp is racemic α -lipoic acid or α -dihydrolipoic acid, (R)- or (S)- α -lipoic acid or (R)- or

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(S)- α -dihydrolipoic acid, racemic α -lipoate or dihydro- α -lipoate or (R)- or (S)- α -lipoate or (R)- or (S)-dihydro- α -lipoate,

A is a physiologically acceptable monovalent or divalent anion,

w is 1 or 2

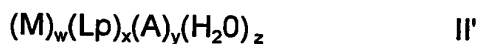
x is 1, 2, 3 or 4,

y is 0, 1, 2 or 3 and

z is 0, 1, 2, 3, 4, 5, or 6,

where the subscripts w, x and y correspond to the valency and charge equalization of the compound of the formula II.

6. The use as claimed in claim 1, wherein the α -lipoic acid used is (R)- α -lipoic acid or the α -lipoate used is (R)- α -lipoate.
7. A preparation comprising at least one mineral salt and (R)- α -lipoic acid or (S)- α -lipoic acid.
8. A metal α -lipoate, metal α -dihydrolipoate or metal- α -lipoic acid complex of the formula II',



where

M is a monovalent to trivalent physiologically acceptable metal cation or a mixture of monovalent to trivalent physiologically acceptable metal cations,

Lp is racemic α -lipoic acid or α -dihydrolipoic acid, (R)- or (S)- α -lipoic acid or (R)- or (S)- α -dihydrolipoic acid, racemic α -lipoate or dihydro- α -lipoate or (R)- or (S)- α -

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lipoate or (R)- or (S)-dihydro- α -lipoate,

A is a physiologically acceptable monovalent or divalent anion,

w is 1 or 2,

x is 1, 2, 3 or 4,

y is 0, 1, 2 or 3 and

z is 0, 1, 2, 3, 4, 5 or 6,

where the subscripts w, x and y correspond to the valency and charge

equalization and

the following compounds are excluded:

$\text{Mn}(\text{Lip}^-)\text{ClO}_4$, $\text{Cu}(\text{Lip}^-)\text{ClO}_4$, $\text{Zn}(\text{Lip}^-)\text{ClO}_4$, $\text{Cd}(\text{Lip}^-)\text{ClO}_4$, $\text{Pb}(\text{Lip}^-)\text{ClO}_4$, $\text{Hg}(\text{Lip}_{\text{rac}})(\text{OH})_2$,
 $\text{Hg}(\text{DHL}_{\text{rac}}^{2-})$, $\text{Ni}(\text{DHL}_{\text{rac}}^{2-})$, $\text{Fe}_2(\text{DHL}_{\text{rac}}^{2-})_3$, $\text{Zn}(\text{Lip}_{\text{rac}}^-)_2(\text{H}_2\text{O})_2$, $\text{Cd}(\text{Lip}_{\text{rac}}^-)_2(\text{H}_2\text{O})_2$

where

Lip^- is monovalent negative racemic or (R)- or (S)- α -lipoate,

$\text{Lip}_{\text{rac}}^-$ is monovalent negative racemic α -lipoate,

Lip_{rac} is racemic α -lipoic acid and

$\text{DHL}_{\text{rac}}^{2-}$ is divalent negative racemic α -dihydrolipoate.

9. A preparation comprising metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 8.
10. A preparation comprising metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 5 and α -lipoic acid or α -dihydrolipoic acid.

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11. The use of the metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 5 as feedstuff or food supplements.
12. The use of the metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 5 in cosmetic formulations
13. The metal α -lipoate, metal α -dihydrolipoate or metal- α -lipoic acid complex as claimed in claim 5 for use as drugs.
14. The use of metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 5 for preparing a drug for treating disorders in which lipoic acid has a therapeutic or prophylactic effect and there is a mineral salt deficiency.
15. The use of the metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 5 for treating diabetes, tumors, HIV infections, AIDS, renal insufficiency, malnutrition, protein-energy malnutrition and mineral deficiencies.